Abstract

The present invention discloses a planarization method of inter-layer dielectrics (ILD) and inter-metal dielectrics (IMD). The key point of the present invention is that after the planarization process of the ILD and the IMD is performed by means of the chemical mechanical polishing (CMP), a cap layer is formed thereon. The cap layer can be a silicon nitride layer, a silicon nitrogen-oxide layer, or a silicon rich oxide layer having a refractive index not less than 1.6. The cap layer can be transmitted by UV light. The effects of the cap layer are to fill micro scratches generated by the CMP and to enhance the functions of anti-reflection and preventing the diffusion of hydrogen atoms. Thereby, the tolerance of subsequent exposition process can be increased. Moreover, the capabilities of data retention of device and device passivation can be enhanced.